

Notice of Allowability

Application No.

10/612,263

Applicant(s)

RINERSON ET AL.

Examiner

Art Unit

Tuan T. Nguyen

2824

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 5/5/05.
2. ☒ The allowed claim(s) is/are 1-26.
3. ☒ The drawings filed on 01 July 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input checked="" type="checkbox"/> Other <u>update search history</u> . |

DETAILED ACTION

1. This is the response to the Applicant's Amendment filed on 5/5/05.

Examiner's Amendment

2. Claim 16, line 1, change 14 to 15.

Allowable Subject Matter

3. Claim 1-26 are allowed.
4. The following is an examiner's statement of reasons for allowance:

The prior art of record fail to disclose a driver set for a cross point memory array comprising, in combination with other cited limitations, a plurality of first x-direction lines on a second fabrication layer above the active surface of the semiconductor substrate that electrically connects the transistor of a line driver group to each other; a plurality of second x-direction lines on the second fabrication layer each second x-direction line electrically connecting the line drivers in each line driver group; a plurality of third x-direction lines on the second fabrication layer, each third x-direction line electrically connected to a single line driver as recited in claims 1-9.

The prior art of record also fail to disclose a driver set for a cross point memory array comprising, in combination with other cited limitation, a plurality of line driver groups that are in electrical communication with a nonvolatile two-terminal cross point memory array wherein the electrical communication is achieved in two metallization layers as recited in claims 10-11.

The prior art of record fail to disclose a driver set comprising, in combination with other cited limitations, a first metal layer that electrically connects all the transistors in the same relative position to each other with conductive lines in the first direction and provides an

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extension for one line driver stage in a second direction, the second direction being orthogonal to the first direction; and a second metal layer that electrically connects all the transistors to a memory array, and electrically connects all the line driver stages in each line driver group, whereby the electrical connection in the one line driver stage is made via the extension as recited in claim 12.

The prior art of record further fail to disclose a re-writable cross point memory array comprising, in combination with other cited limitations, one or two x-direction conductive layers that include conductive array lines, the conductive array lines electrically connected to the x direction line driver groups; and one y-direction conductive layer mat include conductive array lines, the conductive array lines electrically connected to the y direction line driver groups as recited in claims 13-14.

The prior art of record also fail to disclose a re-writable cross point memory array comprising, in combination with other cited limitations, three x-direction conductive layer that include conductive array lines, two y-direction conductive layer that include conductive array lines as recited in claims 15-16.

The prior art further fail to disclose a cross point memory array comprising, in combination with other cited limitations, a plurality of x-direction line drives that drive x-direction conductive array lines; wherein at least some x-direction line drivers connect with x-direction conductive lines at a location other than the line ends as recited in claims 17-18.

The prior art of record also fail to disclose a cross point memory array comprising, in combination with other cited limitations, wherein the plurality of x-direction conductive array lines includes an array cut that is where two contiguous x-direction conductive array lines a

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spaced further apart than other contiguous x-direction conductive array lines as recited in claim 19-26.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Nguyen whose telephone number is (571) 272-1880. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Tuan T. Nguyen', with a long horizontal flourish extending to the right.

July 11, 2005

Tuan T. Nguyen
Primary Examiner
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